

Clark Johnson Job  
 3955 Hwy 55  
 Angier NC 27501

CLARK JOHNSON  
 BIM BLDERS

FOOTAGE: #676

SQUARE FOOTAGE: GARAGE = 876

HEATHER HALL  
 185 HEATHERSTONE CT  
 BENSON NC 27504  
 (919) 207-1403

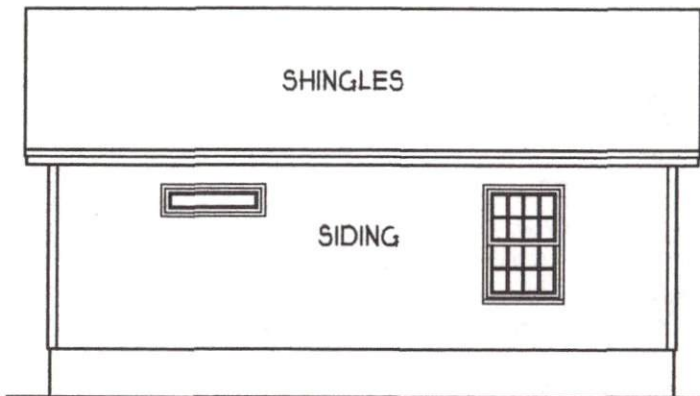
H SQUARED HOME DESIGN, INC.

ANY REVISIONS OF THIS PLAN SHALL BE MADE BY THE ARCHITECT OR HIS LICENSED REPRESENTATIVE. THIS PLAN HAS BEEN DRAWN IN ACCORDANCE WITH THE CAROLINA STATE RESIDENTIAL BUILDING CODES 2006 EDITION.

DATE: 03/14/14

GARAGE

FILE: 020619



LEFT ELEVATION

SCALE 1/8" = 1'-0"

**ENERGY COMPLIANCE**

ZONE 3 = MAX. GLAZING U-FACTOR .35  
 R-VALUE = CEILING R38, WALLS R15, FLOORS R19  
 FOR JOHNSTON, SAMPSON, WAYNE COUNTY

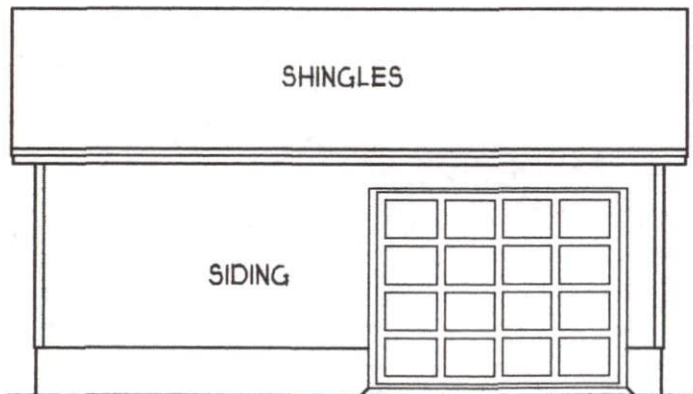
ZONE 4 = MAX. GLAZING U-FACTOR .35  
 R-VALUE = CEILING R38, WALLS R15, FLOORS R19  
 FOR WAKE, DURHAM, ORANGE COUNTY  
 † HARNETT COUNTY

ATTIC VENTILATION:

THE NET FREE VENTILATING AREA SHALL BE NOT LESS THAN 1 TO 150 OF THE AREA OF THE SPACE VENTILATED EXCEPT THAT THE AREA MAY BE 1 TO 300, PROVIDED AT LEAST 50 PERCENT OF THE REQUIRED VENTILATING AREA IS PROVIDED BY VENTILATORS LOCATED IN THE UPPER PORTION OF THE SPACE TO BE VENTILATED AT LEAST 3 FEET ABOVE EAVE OR CORNICE VENTS WITH THE BALANCE OF THE REQUIRED VENTILATION TO BE PROVIDED BY EAVE OR CORNICE VENTS.

GROSS ATTIC AREA TO BE VENTILATED 676 SQ.FT.

676/150 = 4.51 SQ.FT. NET FREE AREA



RIGHT ELEVATION

SCALE 1/8" = 1'-0"

CLARK JOHNSON  
 BIM BLDGRS

FOOTAGE: #676  
 SQUARE FOOTAGE: GARAGE = 876

HEATHER HALL  
 HEATHERSTONE CT  
 BENSON NC 27504  
 (919) 207-1403

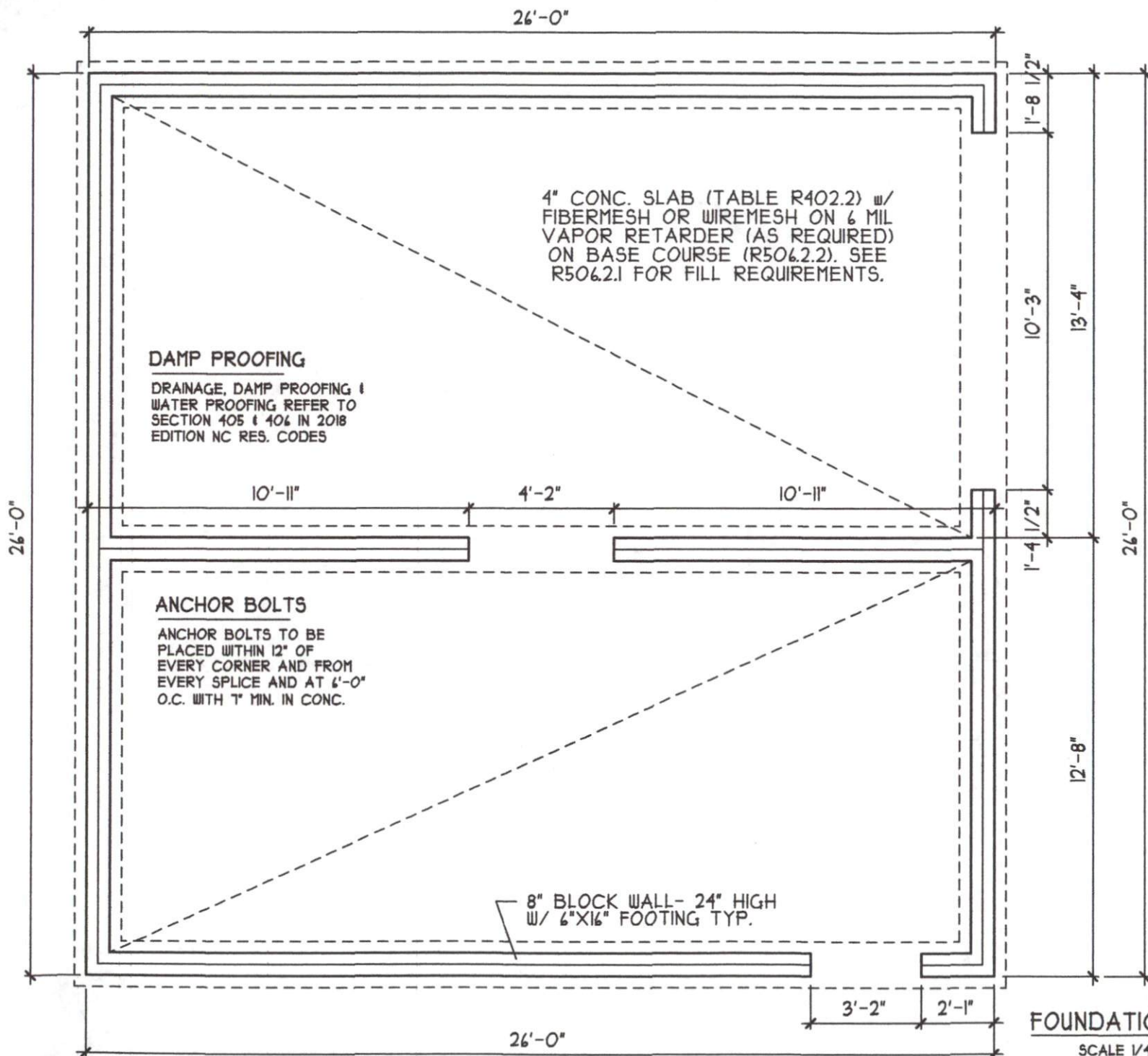
**H SQUARED HOME DESIGN, INC.**

ANY DEVIATION OF THE  
 INFORMATION SHOWN  
 ON THESE PLANS FROM  
 THE ORIGINAL WORK  
 SHALL BE AT THE  
 USER'S RISK.  
 THIS PLAN WAS PREPARED  
 BY AN ARCHITECT  
 REGISTERED IN THE STATE OF  
 CAROLINA STATE BOARD OF  
 ARCHITECTURE UNDER  
 LICENSE NO. 207-1403

DATE: 03/14/19

GARAGE

FILE: 020619



**DAMP PROOFING**

DRAINAGE, DAMP PROOFING & WATER PROOFING REFER TO SECTION 405 & 406 IN 2018 EDITION NC RES. CODES

**ANCHOR BOLTS**

ANCHOR BOLTS TO BE PLACED WITHIN 12" OF EVERY CORNER AND FROM EVERY SPLICE AND AT 4'-0" O.C. WITH T' MIN. IN CONC.

4" CONC. SLAB (TABLE R402.2) w/ FIBERMESH OR WIREMESH ON 6 MIL VAPOR RETARDER (AS REQUIRED) ON BASE COURSE (R506.2.2). SEE R506.2.1 FOR FILL REQUIREMENTS.

8" BLOCK WALL- 24" HIGH w/ 6"X16" FOOTING TYP.

**FOUNDATION PLAN**

SCALE 1/4" = 1'-0"

CLARK JOHNSON  
BIM BLDERS

FOOTAGE: #676

SQUARE FOOTAGE: GARAGE = 676

HEATHER HALL  
165 HEATHERSTONE CT  
BENSON NC 27504  
(919) 207-1403

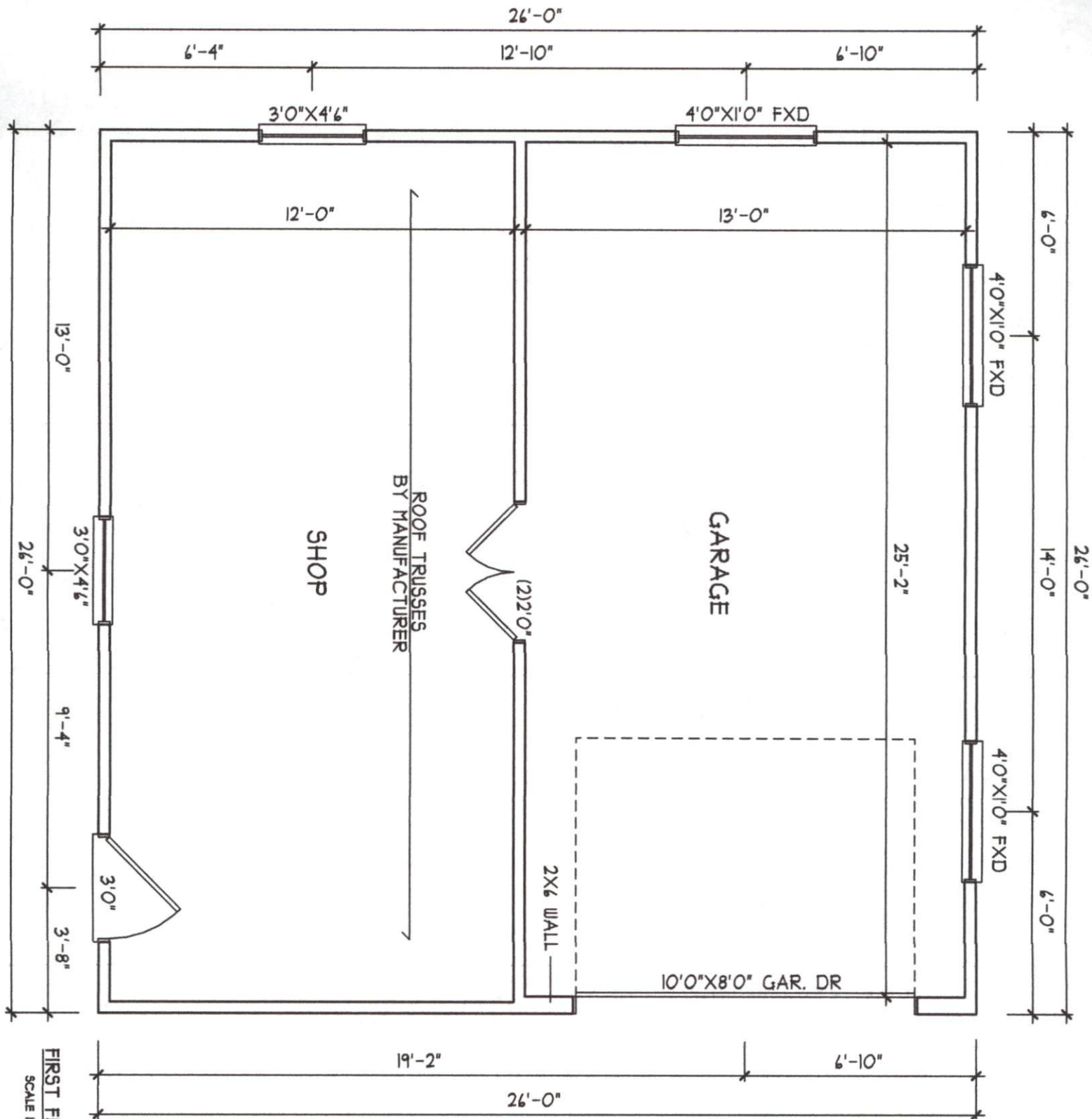
**H SQUARED HOME DESIGN, INC.**

ANY REVISION OF THE PLAN SHALL BE MADE BY THE ARCHITECT OR ENGINEER OF RECORD AND SHALL BE DATED AND NUMBERED AS SHOWN ON SHEET 020619.  
THIS PLAN WAS PREPARED BY THE ARCHITECT OR ENGINEER OF RECORD AND SHALL BE DATED AND NUMBERED AS SHOWN ON SHEET 020619.

DATE: 03/14/19

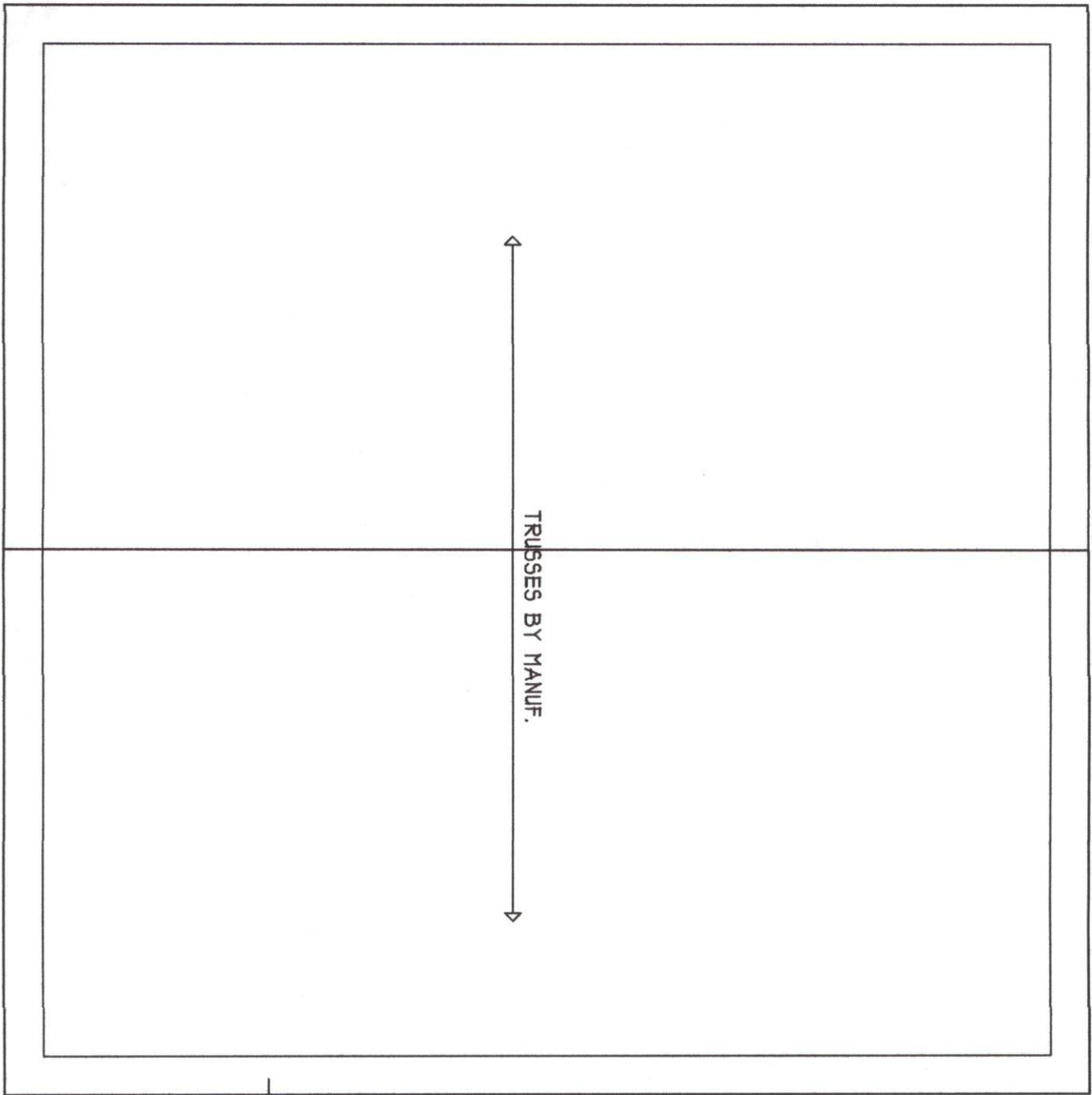
GARAGE

FILE: 020619



FIRST FLOOR PLAN  
SCALE 1/4" = 1'-0"

FILE: 020619	DATE: 03/14/14	ANY DEVIATION OF THE SPECIFIED MEASUREMENTS OR DIMENSIONS VOIDS THE CONTRACTOR'S LIABILITY. THIS PLAN HAS BEEN DRAWN IN ACCORDANCE WITH NORTH CAROLINA STATE RESIDENTIAL BUILDING CODES 2008 EDITION.	<b>H SQUARED HOME DESIGN, INC.</b>	HEATHER HALL 185 HEATHERSTONE CT BENSON NC 27504 (919) 207-1403	SQUARE FOOTAGE:  GARAGE = 676	FOOTAGE:  <b>#676</b>	<b>CLARK JOHNSON</b>  <b>BIM BLDRS</b>



TRUSSES BY MANUF.

12" OVERHANG  
TYP

**ROOF PLAN**

SCALE 1/4" = 1'-0"

FILE: 020619	DATE: 03/11/19	ANY DEVIATION OF THE SPECIFIED MEASUREMENTS OR DIMENSIONS VOIDS H SQUARED HOME DESIGN, INC.'S LIABILITY.  THIS PLAN HAS BEEN DRAWN IN ACCORDANCE WITH NORTH CAROLINA STATE RESIDENTIAL BUILDING CODES 2008 EDITION.	 <b>H SQUARED HOME DESIGN, INC.</b>	HEATHER HALL 165 HEATHERSTONE CT BENSON NC 27504 (919) 207-1403	SQUARE FOOTAGE:  GARAGE = 676	FOOTAGE:  <b>#676</b>	<b>CLARK JOHNSON</b> <hr/> <b>BIM BLDRS</b>
-----------------	-------------------	---	--	--	-------------------------------------	-----------------------------	--

# STRUCTURAL NOTES

1) AN ENGINEER'S SEAL APPLIES ONLY TO STRUCTURAL COMPONENTS INCLUDING ROOF RAFTERS, HP'S, VALLEYS, RIDGES, FLOORS, WALLS, BEAMS AND HEADERS, COLUMNS, CANTILEVERS, OFFSET LOAD BEARING WALLS, PIER & GIRDER SYSTEM AND FOOTINGS. ENGINEER'S SEAL DOES NOT CERTIFY DIMENSIONAL ACCURACY OR ARCHITECTURAL LAYOUT INCLUDING ROOF SYSTEM. ALL REQUIREMENTS FOR PROFESSIONAL CERTIFICATION SHALL BE PROVIDED BY THE APPROPRIATE PROFESSIONAL.

2) ALL CONSTRUCTION SHALL CONFORM TO THE LATEST REQUIREMENTS OF THE NORTH CAROLINA STATE RESIDENTIAL CODE - 2018 EDITION, PLUS ALL LOCAL CODES AND REGULATIONS. THE STRUCTURAL ENGINEER IS NOT RESPONSIBLE FOR, AND WILL NOT HAVE CONTROL OF, CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES, OR FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE CONSTRUCTION WORK NOR WILL THE ENGINEER BE RESPONSIBLE FOR THE CONTRACTOR'S FAILURE TO CARRY OUT THE CONSTRUCTION WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. "CONSTRUCTION REVIEW" SERVICES ARE NOT PART OF OUR CONTRACT. ALL MEMBERS SHALL BE FRAMED, ANCHORED, TIED AND BRACED IN ACCORDANCE WITH GOOD CONSTRUCTION PRACTICE AND THE BUILDING CODE.

DESIGN LOADS (R301.4)	LIVE LOAD (PSF)	DEAD LOAD (PSF)	DEFLECTION (LL)
ROOMS OTHER THAN SLEEPING ROOMS	40	10	L/360
SLEEPING ROOMS	30	10	L/360
ATTIC WITH PERMANENT STAIR	40	10	L/360
ATTIC WITH OUT PERMANENT STAIR	20	10	L/360
ATTIC WITH OUT STORAGE	10	10	L/360
STAIRS	40	---	L/360
EXTERIOR BALCONIES	40	10	L/360
DECKS	40	10	L/360
GUARDRAILS AND HANDRAILS	200	---	---
PASSENGER VEHICLE GARAGES	80	10	L/360
FIRE ESCAPES	40	10	L/360
SNOW	30	---	---
WIND LOAD (BASED ON 15/20 MPH WIND VELOCITY & EXPOSURE B)	---	---	---

3) WALL BRACING: BRACED WALL PANELS SHALL BE CONSTRUCTED ACCORDING TO SECTION R602.10.3. THE AMOUNT AND LOCATION OF BRACING SHALL COMPLY WITH TABLE R602.10.3.1. THE LENGTH OF BRACED PANELS SHALL BE DETERMINED BY SECTION R602.10.3.1. LATERAL BRACING SHALL BE SATISFIED PER METHOD 3 BY CONTINUOUSLY SHEATHING WALLS WITH STRUCTURAL SHEATHING PER SECTION R602.10.3. NOTE THAT ANY SPECIFIC BRACED WALL DETAIL SHALL BE INSTALLED AS SPECIFIED.

4) CONCRETE SHALL HAVE A MINIMUM 28 DAY STRENGTH OF 3000 PSI AND A MAXIMUM SLUMP OF 5 INCHES UNLESS NOTED OTHERWISE (UNO, AIR ENTRAINED PER TABLE 402.2. ALL CONCRETE SHALL BE PROPORTIONED, MIXED, HANDLED, SAMPLED, TESTED, AND PLACED IN ACCORDANCE WITH ACI STANDARDS. ALL SAMPLES FOR PUMPING SHALL BE TAKEN FROM THE EXIT END OF THE PUMP.

5) ALLOWABLE SOIL BEARING PRESSURE ASSUMED TO BE 2000 PSF. THE CONTRACTOR MUST CONTACT A GEOTECHNICAL ENGINEER AND THE STRUCTURAL ENGINEER IF UNSATISFACTORY SUBSURFACE CONDITIONS ARE ENCOUNTERED. THE SURFACE AREA ADJACENT TO THE FOUNDATION WALL SHALL BE PROVIDED WITH ADEQUATE DRAINAGE, AND SHALL BE GRADED 50 AS TO DRAIN SURFACE WATER AWAY FROM FOUNDATION WALLS.

6) ALL FRAMING LUMBER SHALL BE SPF #2 (F = 675 PSF) UNLESS NOTED OTHERWISE (UNO). ALL TREATED LUMBER SHALL BE SYP # 2 (F = 475 PSF). PLATE MATERIAL MAY BE SPF # 3 OR SYP # 3 (F = 475 PSF - MIN).

7) ALL WOODEN BEAMS AND HEADERS SHALL HAVE THE FOLLOWING END SUPPORTS: (1) 2x4 STUD COLUMN FOR 4'-0" MAX. BEAM SPAN (UNO), (2) 2x4 STUDS FOR BEAM SPAN GREATER THAN 4'-0" (UNO).

8) L.V.L. SHALL BE LAMINATED VENEER LUMBER: F<sub>v</sub>=2400 PSI, F<sub>v</sub>=285 PSI, E=1,940,000 PSI. P.S.L. SHALL BE PARALLEL STRAND LUMBER: F<sub>v</sub>=2400 PSI, F<sub>v</sub>=270 PSI, E=2,040,000 PSI. L.S.L. SHALL BE LAMINATED STRAND LUMBER: F<sub>v</sub>=2250 PSI, F<sub>v</sub>=400 PSI, E=1,550,000 PSI. INSTALL ALL CONNECTIONS PER MANUFACTURERS INSTRUCTIONS.

9) ALL ROOF TRUSS AND I-JOIST LAYOUTS SHALL BE PREPARED IN ACCORDANCE WITH THE SEALED STRUCTURAL DRAWINGS. TRUSSES AND I-JOISTS SHALL BE INSTALLED ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS. ANY CHANGE IN TRUSS OR I-JOIST LAYOUT SHALL BE COORDINATED WITH DESIGNER OR ENGINEER.

10) ALL STRUCTURAL STEEL SHALL BE ASTM A-36. STEEL BEAMS SHALL BE SUPPORTED AT EACH END WITH A MINIMUM BEARING LENGTH OF 3 1/2" INCHES AND FULL FLANGE WIDTH PROVIDE SOLID BEARING FROM BEAM SUPPORT TO FOUNDATION. BEAMS SHALL BE ATTACHED TO EACH SUPPORT WITH TWO LAG SCREWS 1/2" DIAMETER x 4" LONG. LATERAL SUPPORT IS CONSIDERED ADEQUATE PROVIDED THE JOIST ARE TOE NAILED TO THE SOLE PLATE, AND SOLE PLATE IS NAILED OR BOLTED TO THE BEAM FLANGE @ 48" O.C. ALL STEEL TUBING SHALL BE ASTM A500.

11) REBAR SHALL BE DEFORMED STEEL, ASTM#6, GRADE 60.

12) PLITCH BEAMS SHALL BE BOLTED TOGETHER USING (2) ROWS OF 1/2" DIAMETER BOLTS (ASTM A507) WITH WASHERS PLACED UNDER THE THREADED END OF BOLT. BOLTS SHALL BE SPACED AT 24" O.C. (MAX), AND STAGGERED AT THE TOP AND BOTTOM OF BEAM (2" EDGE DISTANCE), WITH 2 BOLTS LOCATED AT 4" FROM EACH END.

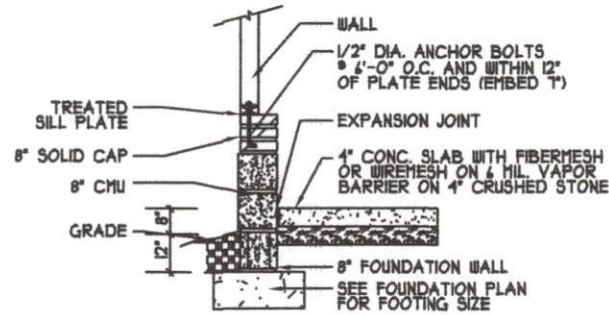
13) BRICK LINTELS SHALL BE 3 1/2" x 1/2" x 1/4" STEEL ANGLE FOR UP TO 4'-0" SPAN AND 6" x 1/2" x 1/4" STEEL ANGLE WITH 4" LEG VERTICAL FOR SPANS UP TO 9'-0" (UNO).

14) THE POSITIVE AND NEGATIVE DESIGN PRESSURE FOR DOORS AND WINDOWS FOR A MEAN ROOF HEIGHT OF 35 FEET OR LESS SHALL BE 25 PSF.

15) THE POSITIVE AND NEGATIVE DESIGN PRESSURES REQUIRED FOR ANY ROOF OR WALL CLADDING APPLICATION NOT SPECIFICALLY ADDRESSED IN THE NORTH CAROLINA STATE RESIDENTIAL CODE - 2018 EDITION SHALL BE AS FOLLOWS:

ROOF:  
45.4 PSF - 2.25:1 PITCH OR LESS  
34.8 PSF - 2.25:1 TO 1:12 PITCH  
21 PSF - 1:12 TO 1:18 PITCH

WALLS:  
24.1 PSF - WALLS



**GARAGE SLAB**  
NTS

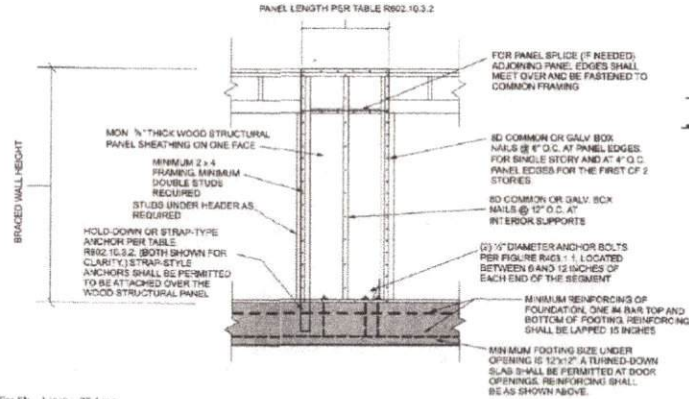


FIG. 5E: 1 inch = 25.4 mm.

FIGURE R602.10.3.2  
ALTERNATE BRACED WALL PANEL

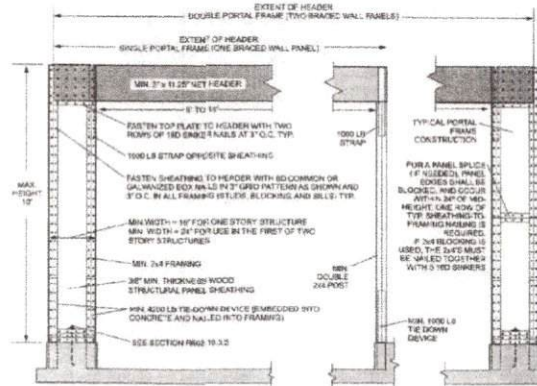


FIG. 5E: 1 inch = 25.4 mm, 1 bar = 304.8 mm, 1 pound force = 4.448 N.

FIGURE R602.10.3.3  
METHOD PFR: PORTAL FRAME WITH HOLD-DOWNS

CLARK JOHNSON  
BIM BLDERS

FOOTAGE:

#676

SQUARE FOOTAGE:

GARAGE = 676

HEATHER HALL  
185 HEATHERSTONE CT  
BENSON NC 27504  
(919) 207-1403

H SQUARED  
HOME  
DESIGN, INC.

ANY DERIVATION OF THE ORIGINAL DRAWING OR REVISIONS MUST BE APPROVED BY THE ORIGINAL DESIGNER.  
THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE NORTH CAROLINA STATE RESIDENTIAL BUILDING CODES 2018 EDITION.

DATE:  
03/14/19

GARAGE

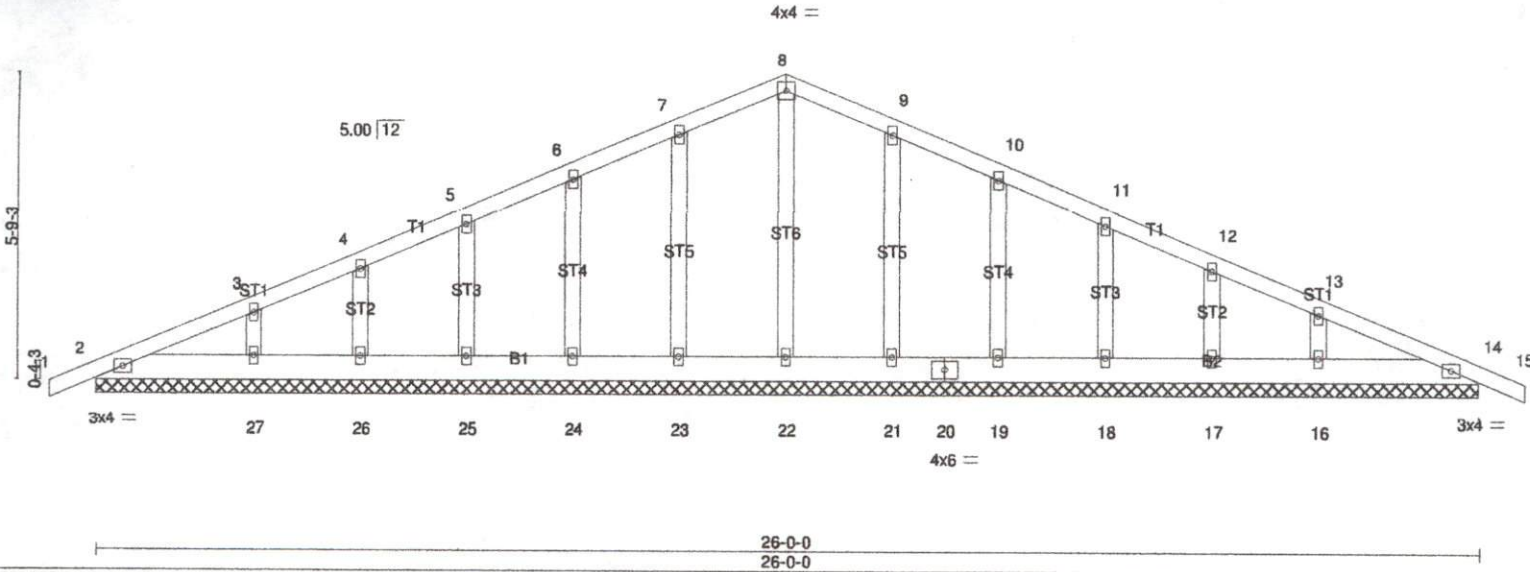
FILE:  
020619

Job J0319-1406	Truss A1GE	Truss Type GABLE	Qty 2	Ply 1	Johnson Job
Comtech, Inc., Fayetteville, NC 28309, Lenny Norris					Job Reference (optional)

Run: 8.120 s Jun 27 2017 Print: 8.120 s Jun 27 2017 MiTek Industries, Inc. Mon Mar 25 09:14:42 2019 Page  
ID:1ZbFBsu8jEPV3jyPVDzszXSUk-gRS3Wna0nXeCUQz6k9z18AqIP\_P94Qvr0Do5MTzXS

0-10-8	13-0-0	26-0-0	26-10-8
0-10-8	13-0-0	13-0-0	0-10-8

Scale = 1:4



<b>LOADING</b> (psf)	<b>SPACING-</b>	<b>CSI.</b>	<b>DEFL.</b>	<b>PLATES</b>	<b>GRIP</b>
TCLL 20.0	2-0-0	TC 0.06	in (loc) V/defl L/d	MT20	244/190
TCDL 10.0	Plate Grip DOL 1.15	BC 0.02	Vert(LL) 0.00 14 n/r 120		
BCLL 0.0 *	Lumber DOL 1.15	WB 0.06	Vert(CT) 0.00 14 n/r 120		
BCDL 10.0	Rep Stress Incr YES	Matrix-S	Horz(CT) 0.00 14 n/a n/a		
	Code IRC2015/TPI2014				
					Weight: 151 lb FT = 20%

<b>LUMBER-</b>	<b>BRACING-</b>
TOP CHORD 2x4 SP No.1	TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins.
BOT CHORD 2x6 SP No.1	BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.
OTHERS 2x4 SP No.3	MiTek recommends that Stabilizers and required cross bracing be installed during truss erection, in accordance with Stabilizer Installation guide.

**REACTIONS.** All bearings 26-0-0.  
 (lb) - Max Horz 2=-117(LC 13)  
 Max Uplift All uplift 100 lb or less at joint(s) 2, 14, 23, 24, 25, 26, 27, 21, 19, 18, 17, 16  
 Max Grav All reactions 250 lb or less at joint(s) 2, 14, 22, 23, 24, 25, 26, 27, 21, 19, 18, 17, 16

**FORCES.** (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.

- NOTES-**
- Unbalanced roof live loads have been considered for this design.
  - Wind: ASCE 7-10; Vult=130mph (3-second gust) Vasd=103mph; TC DL=6.0psf; BCDL=6.0psf; h=15ft; Cat. II; Exp C; enclosed; MWFRS (envelope) gable end zone and C-C Exterior(2) 0-10-8 to 3-6-5, Interior(1) 3-6-5 to 13-0-0, Exterior(2) 13-0-0 to 17-4-13 zone; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
  - Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
  - All plates are 2x4 MT20 unless otherwise indicated.
  - Gable requires continuous bottom chord bearing.
  - Gable studs spaced at 2-0-0 oc.
  - This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
  - \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas with a clearance greater than 6-0-0 between the bottom chord and any other members.
  - Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 100 lb uplift at joint(s) 2, 14, 23, 24, 25, 26, 27, 21, 19, 18, 17, 16.
  - This truss is designed in accordance with the 2015 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

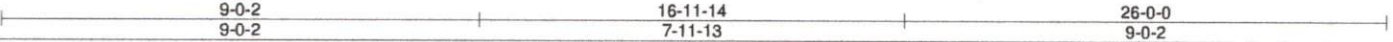
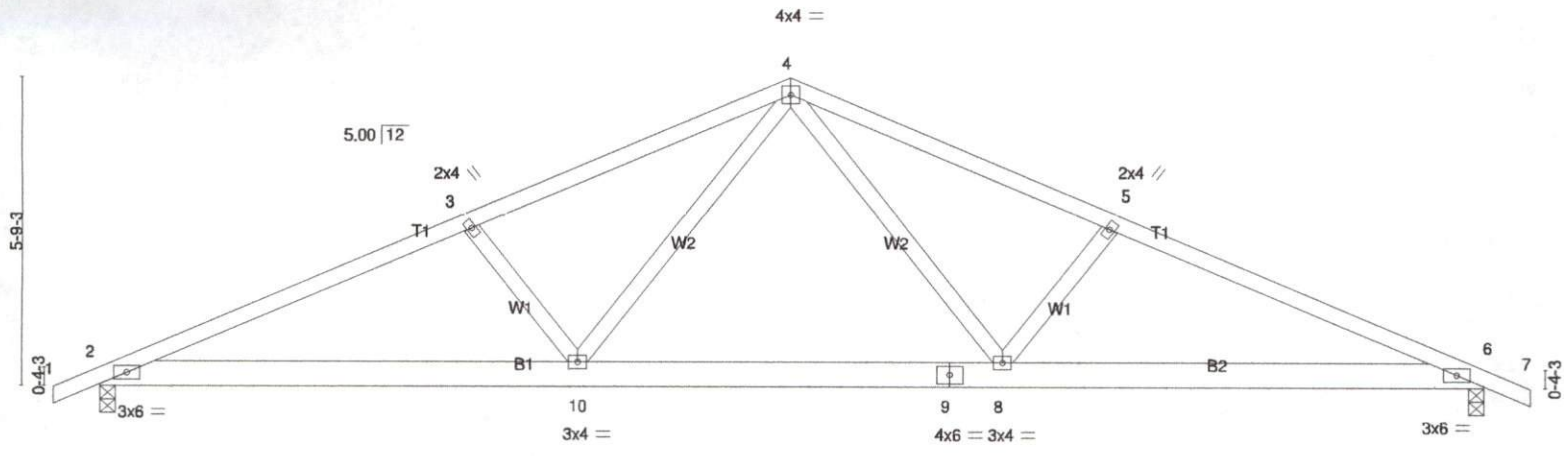
**LOAD CASE(S)** Standard

Job <b>J0319-1406</b>	Truss <b>A1</b>	Truss Type <b>FINK</b>	Qty <b>12</b>	Ply <b>1</b>	<b>Johnson Job</b>
Comtech, Inc., Fayetteville, NC 28309, Lenny Norris					Job Reference (optional)

Run: 8.120 s Jun 27 2017 Print: 8.120 s Jun 27 2017 MiTek Industries, Inc. Mon Mar 25 09:14:42 2019 Page 1  
 ID:1ZbFBsu8jEPV3jyPVDezszsXSUk-gRS3Wna0nXeCUQz6k9z18AqC0\_JS4Mcr0Do5MTzXSGx



Scale = 1:43.4



<b>LOADING</b> (psf)	<b>SPACING-</b>	<b>CSI.</b>	<b>DEFL.</b>	<b>PLATES</b>	<b>GRIP</b>
TCLL 20.0	2-0-0	TC 0.41	in (loc) l/defl L/d	MT20	244/190
TCDL 10.0	Plate Grip DOL 1.15	BC 0.39	Vert(LL) -0.08 8-10 >999 360		
BCLL 0.0 *	Lumber DOL 1.15	WB 0.27	Vert(CT) -0.16 6-8 >999 240		
BCDL 10.0	Rep Stress Incr YES	Matrix-S	Horz(CT) 0.04 6 n/a n/a		
	Code IRC2015/TPI2014		Wind(LL) 0.05 8 >999 240		
				Weight: 134 lb	FT = 20%

**LUMBER-**  
 TOP CHORD 2x4 SP No.1  
 BOT CHORD 2x6 SP No.1  
 WEBS 2x4 SP No.3

**BRACING-**  
 TOP CHORD Structural wood sheathing directly applied or 3-10-15 oc purlins.  
 BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

MiTek recommends that Stabilizers and required cross bracing be installed during truss erection, in accordance with Stabilizer Installation guide.

**REACTIONS.** (lb/size) 2=1090/0-3-8 (min. 0-1-8), 6=1090/0-3-8 (min. 0-1-8)  
 Max Horz 2=-69(LC 17)  
 Max Uplift 2=-80(LC 12), 6=-80(LC 13)

**FORCES.** (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.  
 TOP CHORD 2-11=-2079/455, 3-11=-2001/472, 3-12=-1828/424, 4-12=-1749/449, 4-13=-1749/449,  
 5-13=-1828/424, 5-14=-2001/472, 6-14=-2079/454  
 BOT CHORD 2-10=-344/1850, 9-10=-153/1233, 8-9=-153/1233, 6-8=-359/1850  
 WEBS 3-10=-407/238, 4-10=-110/651, 4-8=-110/651, 5-8=-407/238

- NOTES-**
- 1) Unbalanced roof live loads have been considered for this design.
  - 2) Wind: ASCE 7-10; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=15ft; Cat. II; Exp C; enclosed; MWFRS (envelope) and C-C Exterior(2) -0-10-8 to 3-6-5, Interior(1) 3-6-5 to 13-0-0, Exterior(2) 13-0-0 to 17-4-13 zone; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
  - 3) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
  - 4) \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas with a clearance greater than 6-0-0 between the bottom chord and any other members.
  - 5) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 100 lb uplift at joint(s) 2, 6.
  - 6) This truss is designed in accordance with the 2015 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard